

In the drawings:

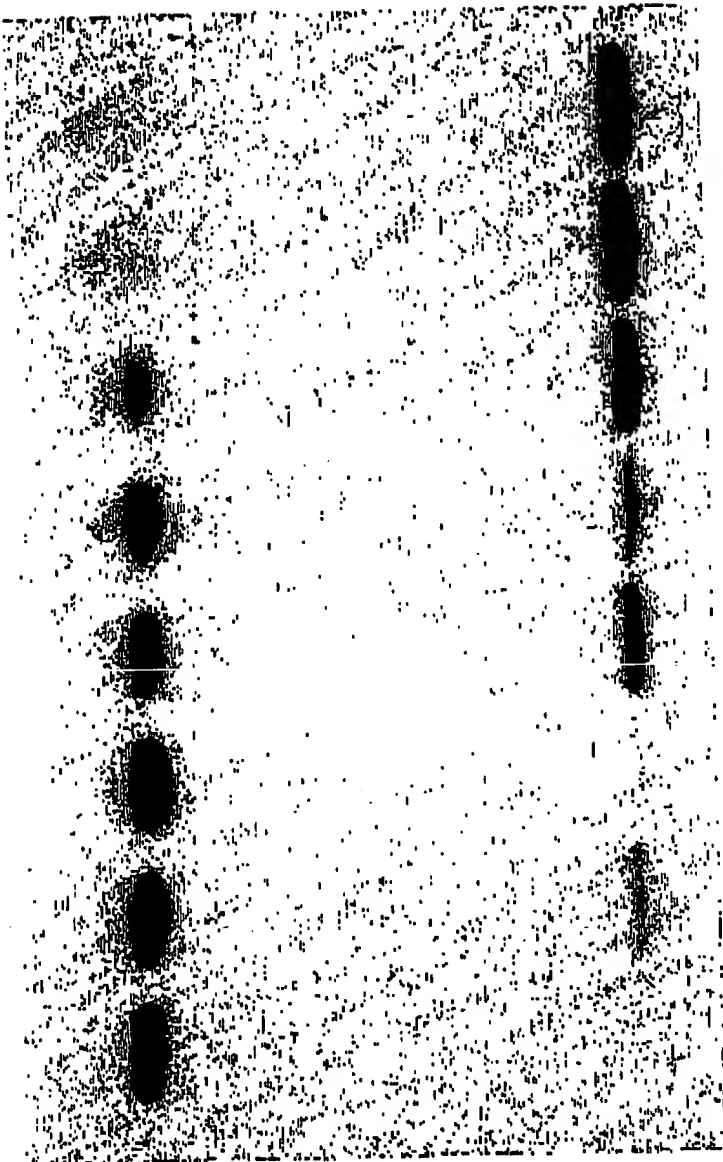
The attached sheet of drawings includes changes to Figure 1. This sheet replaces the original sheet of Figure 1.



Time Course of *E. coli* versus *N. gonorrhoeae* RNase P Activity

0 20 60 120

E N E N E N E N



Precursor

5' Leader

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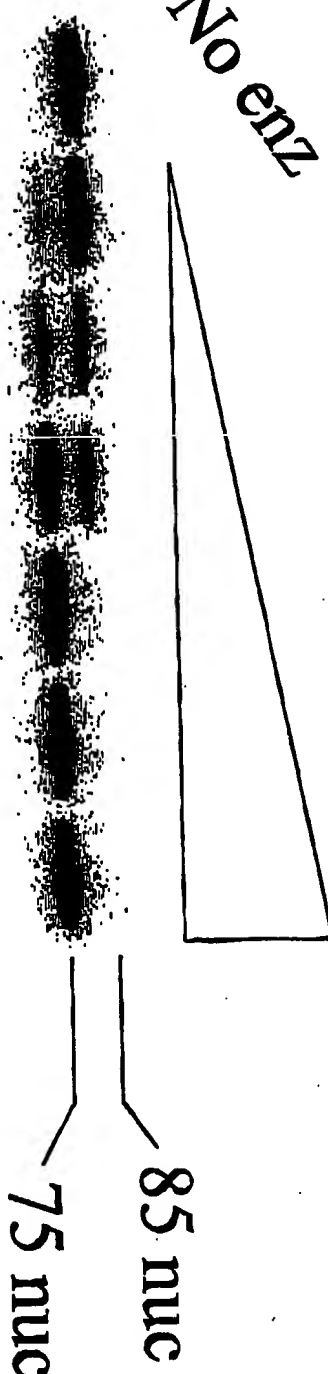
Recombinant *Neisseria gonorrhoeae* RNase P Time Course of Activity

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No enz



10 nuc

1 2 3 4 5 6 7



Recombinant *Porphyromonas gingivalis* RNase P Enzyme Activity



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FIG. 1 Continued

| SEQ ID NO. | Residue Number* | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | - 80 - | 84 | 85 | - 86 | 87 | 101 | 102 | 103 | 104 | - - - - | 105 | |
|-------------------------------|---|-----|----|----|----|----|----|----|-----|----|----|--------|----|----|------|----|-----|-----|-----|-------|---------|-------|----|
| Gram Negative Bacteria | | | | | | | | | | | | | | | | | | | | | | | |
| gamma purple | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | <i>Escherichia coli</i> (119) | | R | I | | | | L | T | E | | | | F | | V | | S | E | A | - - - | | |
| 40 | <i>Proteus mirabilis</i> (119) | | R | I | | | | L | A | E | | | | F | | V | | T | E | V | - - - | | |
| 41 | <i>Haemophilus influenzae</i> (136) | | R | I | | | | L | V | E | | | | F | | F | | F | A | Q | I | - - - | |
| 42 | <i>Pseudomonas putida</i> (133) | | R | L | | | | L | M | D | | | | I | | I | | H | Q | H | - - - | | |
| 43 | <i>Buchnera aphidicola</i> (114) | | K | I | | | | L | I | E | | | | F | | V | | V | N | I | - - - | | |
| 44 | <i>Salmonella typhi</i> (119) | X | R | I | | | | L | T | E | | | | F | | V | | S | E | A | - - - | | |
| 45 | <i>Yersinia pestis</i> (119) | | R | I | | | | L | T | E | | | | F | | V | | T | E | A | - - - | | |
| 46 | <i>Klebsiella pneumoniae</i> * | | R | I | | | | L | T | E | | | | F | | V | | S | E | A | - - - | | |
| 47 | <i>Salmonella paratyphi</i> * | | R | I | | | | L | T | E | | | | F | | V | | S | E | A | - - - | | |
| 48 | <i>Vibrio cholerae</i> * | | R | F | | | | I | C | E | | | | F | | V | | F | N | L | - - - | | |
| 49 | <i>Pseudomonas aeruginosa</i> * | | R | L | | | | L | I | E | | | | I | | V | | H | Q | Q | - - - | | |
| 50 | <i>Shewanella putrefaciens</i> * | | R | I | | | | V | I | D | | | | I | | V | | N | K | L | - - - | | |
| alpha purple | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | <i>Coxiella burnetii</i> (121) | | R | V | | | | V | V | E | | | | I | | V | | Y | E | C | - - - | | |
| 52 | <i>Rickettsia prowazekii</i> (121) | | K | I | | | | R | I | H | | | S | N | | I | | Q | Y | E | - - - | | |
| 53 | <i>Caulobacter crescentus</i> * | | R | A | | | | R | L | E | | | P | H | | Y | | L | D | D | V | K | T |
| epsilon purple | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | <i>Helicobacter pylori</i> 26695 (161) | | L | I | | | | R | L | S | | | C | Q | | A | L | E | K | H | F | L | E |
| 55 | <i>Helicobacter pylori</i> J99 (161) | | L | I | | | | R | L | S | | | C | Q | | A | L | E | K | H | F | L | E |
| 56 | <i>Campylobacter jejuni</i> * | | R | S | | | | I | L | A | | | Q | | K | Y | | E | K | N | L | K | W |
| beta purple | | | | | | | | | | | | | | | | | | | | | | | |
| 57 | <i>Neisseria gonorrhoeae</i> * | | Y | M | | | | V | I | R | D | | | F | | V | | R | A | E | - - - | | |
| 58 | <i>Neisseria meningitidis</i> * | | Y | M | | | | V | I | R | D | | | F | | V | | R | A | E | - - - | | |
| 59 | <i>Bordetella pertussis</i> * | | T | L | | | | V | I | E | | | | Y | | V | | K | R | S | A | R | A |
| 60 | <i>Thiobacillus ferrooxidans</i> * | | R | I | | | | R | L | E | | | | V | | V | | G | A | Y | - - - | | |
| Gram Positive Bacteria | | | | | | | | | | | | | | | | | | | | | | | |
| high G & C | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | <i>Streptomyces bikiniensis</i> (123) | | Q | V | | | | R | L | H | | | L | P | | L | V | A | R | D | - - - | | |
| 62 | <i>Streptomyces coelicolor</i> (123) | | K | V | | | | R | L | H | | | P | L | V | | V | A | R | D | - - - | | |
| 63 | <i>Micrococcus luteus</i> (132) | | R | V | | | | R | L | S | A | | L | P | | V | L | V | R | R | E | T | V |
| 64 | <i>Mycobacterium tuberculosis</i> (125) | H | R | V | A | | | R | L | H | | | H | D | H | V | | E | Q | Q | - - - | | |
| 65 | <i>Mycobacterium leprae</i> (120) | H | R | V | A | | | R | L | H | | | H | D | H | V | | E | Q | Q | - - - | | |
| 66 | <i>Mycobacterium bovis</i> (115) | H | R | V | A | | | R | L | H | | | H | D | H | V | | E | Q | Q | - - - | | |
| 67 | <i>Mycobacterium avium</i> * | H | R | V | A | | | R | L | H | | | E | R | L | V | | E | A | Q | E | - - - | |
| 68 | <i>Corynebacterium diphtheriae</i> * | H | R | V | S | P | | Q | L | H | | | H | | | V | | R | A | D | V | Q | A |
| low G & C | | | | | | | | | | | | | | | | | | | | | | | |
| 73 | <i>Bacillus subtilis</i> (119) | | R | I | | | | L | I | Q | | | K | | Y | | I | T | K | K | S | - - - | |
| 74 | <i>Bacillus halodurans</i> (118) | | R | V | | | | L | I | Q | | | S | | Y | | I | K | G | S | - - - | | |
| 75 | <i>Bacillus anthracis</i> * | | R | I | K | | | M | I | Q | | | D | | F | | I | K | K | S | - - - | | |
| 76 | <i>Mycoplasma capricolum</i> (102) | | K | V | | | | Q | I | M | | | I | | I | | I | S | K | L | - - - | | |
| 77 | <i>Mycoplasma pneumoniae</i> (118) | | L | I | | | | Q | V | K | A | | N | | V | | V | K | Q | T | I | - - - | |
| 78 | <i>Mycoplasma genitalium</i> (128) | | L | I | | | | Q | I | K | S | | E | | I | | V | K | Q | K | L | - - - | |
| 79 | <i>Streptococcus pyogenes</i> * | | A | V | | | | K | I | P | H | | K | | F | | V | Q | Q | N | - - - | | |
| 80 | <i>Streptococcus mutans</i> * | | A | I | | | | K | L | R | H | | L | G | | F | | V | K | K | N | - - - | |
| 81 | <i>Streptococcus pneumoniae</i> * | | Q | I | | | | R | I | R | H | | V | | F | | V | E | K | N | - - - | | |
| 82 | <i>Staphylococcus aureus</i> NCIC* | | K | I | | | | A | I | E | | | L | | I | | V | Q | N | S | - - - | | |
| 83 | <i>Staphylococcus aureus</i> COL* | | K | I | | | | A | I | E | | | L | | I | | V | Q | N | S | - - - | | |
| 84 | <i>Clostridium difficile</i> * | | R | V | | | | L | I | E | | | K | | I | | V | K | N | - - - | | | |
| Cyanobacteria | | | | | | | | | | | | | | | | | | | | | | | |
| 85 | <i>Synechocystis PCC6803</i> (124) | | R | L | | | | Q | I | A | | | K | | V | | I | L | R | E | - - - | | |
| 86 | <i>Pseudanabaena PCC6903</i> (116) | | R | F | | | | Q | L | A | | | K | | Q | | V | G | D | D | - - - | | |
| Spirochaete | | | | | | | | | | | | | | | | | | | | | | | |
| 87 | <i>Borrelia burgdorferi</i> (119) | | R | I | | | | L | F | E | | | E | | I | | F | E | S | L | - - - | | |
| 88 | <i>Treponema pallidum</i> (133) | | R | A | | | | L | S | E | | | V | | L | | L | C | V | - - - | | | |
| Chlamydiae | | | | | | | | | | | | | | | | | | | | | | | |
| 89 | <i>Chlamydia trachomatis</i> (120) | | R | F | | | | I | V | E | | | L | | Q | V | | S | E | E | L | L | Q |
| 90 | <i>Chlamydia trachomatis</i> MoPn* | | R | F | | | | I | V | E | | | L | | Q | V | | S | A | D | L | L | K |
| 91 | <i>Chlamydia pneumoniae</i> (139) | | S | F | | | | V | V | E | | | L | | Q | I | | L | Q | D | F | I | N |
| Thermotoga | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | <i>Thermotoga maritima</i> (117) | | K | L | | | | W | V | E | | | I | | I | | V | R | E | K | - - - | | |
| Bacteroides | | | | | | | | | | | | | | | | | | | | | | | |
| 70 | <i>Porphyromonas gingivalis</i> * | | R | V | | | | L | V | E | | | L | | | | L | P | D | F | R | T | V |
| Deinococci | | | | | | | | | | | | | | | | | | | | | | | |
| 71 | <i>Deinococcus radiodurans</i> * | | R | A | | | | R | V | E | | | L | | R | A | | L | A | Q | A | L | Q |
| Green-Sulfur | | | | | | | | | | | | | | | | | | | | | | | |
| 72 | <i>Chlorobium tepidum</i> * | | R | I | | | | L | M | E | | | T | | H | Q | | E | R | F | R | A | I |
| % Identity | | 100 | 89 | | | | | 79 | 100 | | 91 | | 74 | | 75 | | 77 | | 68 | | | | 74 |